

What is claimed is:

1. A method of analyzing in real time the correspondence of image characteristics in corresponding video images which, taking into consideration  
5 selected optimizing criteria, proceeds from the digital input image data for defining a correspondence vector field and which is based on the hybrid recursion method which includes a block recursion with an integrated pixel recursion for detecting a corrected block vector as the correspondence vector of the given actual pixel,  
10 characterized by the fact that for detecting a disparity vector field as correspondence vector field the input image data are generated on the basis of the two video images of a stereoscopic image pair generated by a multiple camera system of arbitrary stereo geometry, whereby the image characteristics in the two video images  
15 of the stereoscopic image pair correspond to each other by way of a spacial displacement dependent upon the depth of the associated image characteristic in space, and that for satisfying the epipolar condition for clamping the corrected block vector to the given epipolar line of the stereo geometry, the parameters of the stereo geometry are included in the  
20 correction of the block vector.
2. The method according to claim 1,  
characterized by the fact that  
the input image data are generated as transformed equivalents from the two  
25 video images of a stereoscopic image pair.
3. The method according to claim 2,  
characterized by the fact that  
the transformed equivalents are generated by rectification of the stereoscopic  
30 image pair.

4. The method according to claim 3,  
characterized by the fact that  
differently transformed equivalents of a stereoscopic image pair are  
processed as input image data in the block recursion and in the integrated  
5 pixel recursion.

5. The method according to claim 4,  
characterized by the fact that  
the optimizing criterion selected in the block recursion is the displaced block  
10 difference and the optimizing criterion selected in the pixel recursion (PRC) is  
the displaced pixel difference.

6. The method according to claim 5,  
characterized by the fact that  
15 detection of the disparity vector of the given actual pixel is limited to a one-  
dimensional search space by parametrization of the epipolar lines of the  
stereo geometry.

7. The method according to claim 6,  
20 characterized by the fact that  
that the disparity analysis is restricted to the limited number of pixels of a  
closed video object.

8. The method according to claim 7,  
25 characterized by the fact that  
that the in the block recursion the individual blocks are processed  
independently of direction.

9. The method according to claim 8,  
30 characterized by the fact that  
that initially the blocks are processed for all even-numbered or uneven-

numbered display lines and that in consecutive display lines the processing direction changes and that in consecutive stereoscopic image pairs the block recursions alternatingly starts in the uppermost and lowest display line.

- 5 10. The method according to claim 9,  
characterized by the fact that  
processing is implemented strictly horizontally or strictly vertically.

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